Fisheries and Oceans Canada | Pêches et Océans Canada

A POLICY FOR SELECTIVE FISHING IN CANADA'S PACIFIC FISHERIES

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Canada

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1. INTRODUCTION

Because different species and stocks often mingle in the open ocean and river fisheries, fishers seeking stocks in greater abundance regularly catch less abundant or threatened fish stocks, marine mammals and seabirds. Even a ban on fishing a particular stock or species will not enable the recovery of a severely weakened population in many cases, unless some way is found to prevent the unintended harvesting, known as bycatch, that is inevitable in conventional mixed-stock fisheries. Coho salmon from the Thompson and upper Skeena rivers, for example, may be intercepted by salmon fishing fleets fishing for more abundant salmon species such as sockeye, pink, chum and chinook. As a result, some stocks of coho will remain perilously low until at least 2005 or 2007, or until ocean conditions improve.

Though concerns for those critical coho stocks have existed for some time, new scientific evidence threatened to shut down the Pacific salmon fishery in 1998. In response, managers in Fisheries and Oceans Canada's Pacific Region developed a strategy to harvest available abundances of large, healthy stocks of salmon of all species while ensuring conservation of smaller, threatened stocks. The answer, not just for salmon, but groundfish, invertebrates, seabirds, marine mammals, and all other species at risk of over-exploitation, is the widespread adoption of selective fishing techniques.

This document, the seventh in a series that began in October 1998 with *A New Direction for Canada's Pacific Salmon Fisheries,*[1] sets out selective fishing policy and an implementation framework for Canada's First Nations, recreational and commercial fisheries in the Pacific Region. It builds on the May 1999 discussion document, *Selective Fishing in Canada's Pacific Fisheries*, and incorporates the outcome of discussions with, and comments from, First Nations, commercial and recreational fishers and other stakeholders in the Pacific fisheries that resulted from that release.

Copies of *Selective Fishing in Canada's Pacific Fishery* were sent to all First Nations and First Nations Tribal Councils and organizations in BC, all commercial licence holders, commercial harvester organizations, and key recreational fishing representatives. It was also made available to participants at a November 1999 selective fisheries multi-stakeholder meeting, posted on the Department's website and distributed at several public events.

Fisheries and Oceans Canada consulted with First Nations directly on the May 1999 paper through the Aboriginal Fisheries Strategy discussions for the 1999 salmon season. Fisheries and Oceans staff also presented and/or discussed the paper at the following meetings:

- The Groundfish Trawl Advisory Committee
- The Halibut Advisory Board
- The Fishing Industry Selective Salmon Harvesters Association

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[1] The twelve principles of the New Directions for Canada's Pacific Salmon Fishery are listed in Annex 2.

- The Shrimp Trawl Sectoral Committee
- The Pacific Fisheries Resource Conservation Council
- Visions 2000
- The North Coast (Salmon) Advisory Board
- South Coast (Salmon) Advisory Committee

A word about habitat

This document will deal only with the selective fishing issues associated with harvesting and will not address adverse impacts of harvesting activities on fish habitat. Although habitat issues are of great importance, the scope is too broad to be included in this paper.

Towards a sustainable fishery

The ability of licensed fishers to fish selectively, avoiding or releasing unharmed non-target fish, invertebrates and marine mammals, is emerging as a fundamental element of Canada meeting the conservation objectives of the federal *Oceans Act,* the requirements of the forthcoming *Species at Risk Act* (pending) and our international commitments to preserve biological diversity and fish responsibly as a signatory to the Code of Conduct for Responsible Fishing developed by the UN Food and Agriculture Organization.[2] In 1999, Canada agreed to the UN Food and Agriculture Organization's (FAO) "International Plan of Action" for the assessment and reduction of seabird bycatch in longline fisheries. Canada is to develop a National Plan of Action and report back to the FAO Committee on Fisheries (COFI) meeting in 2001. Work on the plan of action has commenced in the Pacific Region with the collection of seabird bycatch data to first determine the extent to which seabird catch is a concern.

Just as catch limits are required for target species in a conservation-based fishery, proper management actions must be taken to ensure a conservation-based fishery for target species. Similar management actions must also be taken to ensure conservation of non-target species. Fisheries and Oceans Canada will establish appropriate management standards and limits on target and non-target stocks. The ability of harvesters to work within these standards and limits will determine the nature, duration and location of all future fisheries in Canada's Pacific region.

In 1998, the Department initiated a selective salmon fisheries program, and since then has funded over 100 experimental studies in the Pacific Region to support First Nations, recreational anglers and commercial harvesters in improving selective fishing practices. Significant progress has been made and many lessons learned.

It has been demonstrated that purse seiners can, through careful handling of the catch, reduce short-term post-release mortality of coho salmon from the standard 25 percent to 5 percent. This

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[2] The principles of the Canadian Code of Conduct for Responsible Fishing Operations can be found in Annex 3.

has been achieved by employing techniques such as brailing (dipnetting) salmon from the water to a sorting area on the deck, allowing species of concern to recuperate in on-board revival tanks before release, slowing the pace of the fishery and adopting innovative new brailer designs. These techniques have provided access to lucrative sockeye and pink salmon fisheries that otherwise would have remained closed for conservation reasons. Further work is underway examining in-water sorting and holding of seine-caught salmon which, in addition to improved market quality of fish, may result in even better post-release survival.

Salmon gillnet harvesters have, under highly controlled experimental conditions, demonstrated the ability to lower short-term, post-release mortality of coho from the standard 60 percent mortality to as low as 5 percent. Work is underway to adapt the experimental techniques, such as short set times, smaller mesh size, improved revival tank designs and very careful handling of fish to real fishing situations. It has also been demonstrated that gillnets tend to catch a lower ratio of coho in a given area than other salmon fishing gear, and can further reduce coho bycatch by fishing in daylight. Over the past two years gillnet harvesters have developed a 'tool box' of net designs and fishing practices that can be applied on a specific fishery basis.

Early results indicate that salmon troll gear can selectively catch one species over another. For example, large plugs tend to catch chinook over coho salmon. Current studies by trollers are expected to increase post-release survival of bycatch by improved release gear and methods. The nature of salmon trolling gear has, to some degree, limited the range of potential modifications. However, troll fleets have the potential to successfully avoid non-target species through time and area specific fishing patterns. Satellite catch reporting technology may in the future enhance this method of selective fishing for salmon trollers.

Catch and release studies in the recreational salmon fishery have demonstrated that hook size and configuration, and some methods of fishing, have significantly different post-release mortality of coho salmon than others. These results will lead to more sensitive and sustainable management regimes. For example, motor mooching with herring bait can result in 2.5 times the standard of 10 percent post-release mortality attributed to recreationally caught coho.

To date, most post-release studies have been based on relatively short-term holding (24 to 48 hours). The work involved in determining the long-term effects of releasing salmon is complex and expensive. The Department is working with the academic community to establish a more comprehensive understanding of the impact on released salmon.

Perhaps as important as the technological changes to fishing gear is the manner in which gear is used and fish are identified and handled. With a widespread recognition and adoption of responsible fishing, harvesters have initiated training and education programs that develop the skills with which bycatch species can be released with the greatest chance of survival.

Since its inception, the focus of the program has been on salmon fisheries. However, the concept is neither new nor unique to the Pacific salmon fishery. Many of the test projects, such as fish traps and weirs, are based on traditional technologies employed for centuries by First Nations,

who are currently working with Fisheries and Oceans' staff to refine and promote those techniques.

The Department, in conjunction with the provincial government, has also been working with the Deep Sea Trawlers Association of BC, the Groundfish Research and Conservation Society, Pacific Coast Shrimpers' Cooperative Association and the BC Beam Trawlers' Association to address a number of bycatch issues. For example, groundfish harvesters have recently introduced modifications to deep-water trawl nets to reduce the catch of juvenile Thornyheads, adopted at-sea observers into hook and line fisheries, substantially reduced halibut bycatch in the trawl fishery and, after some study, introduced escape rings for sablefish traps to reduce juvenile bycatches. Increased attention by groundfish harvesters to bycatch issues and selective fishing solutions has also led to better communication among fishers and with the Department. Shorter tows of trawl gear and improved halibut gear, such as hook design, have reduced juvenile bycatches. To respond to Canada's commitment under the Code of Conduct, data collection on seabird bycatches has been initiated in all fisheries in which at-sea observers are employed.

Shrimp harvesters have been experimenting with selectivity grids and separator panels in the beam and otter trawl fisheries for several years. Recently, significant fishing restrictions have been placed on shrimp otter trawlers due to eulachon conservation and bycatch concerns. As a result, otter trawlers have initiated further studies of grids and deflector devices using a twin trawl design that allows comparison of different treatments to gear.

These are examples of where harvesters in groundfish and invertebrate fisheries are making gains in moving toward more selective fisheries. Though these initiatives, and many others not detailed here, are making significant progress, it is now time to implement policy initiatives that will encourage the continuation of this work, while setting priorities and benchmarks on which progress can be measured.

Fisheries and Oceans Canada will, while continuing to work with fish harvesters and anglers, set selective fishing standards and develop appropriate regulations to reduce bycatches in all fisheries. It will be the responsibility of fish harvesters to meet these standards by developing new fishing gear and practices. The Department has established two links between selective fishing and allocation, one short-term and one long-term, through previous papers in the *New Directions* series.

To encourage selective fishing:

- *a portion of the total available commercial catch will be set aside for existing commercial licence holders to test alternative, more selective harvesting gear and technology, and*
- *over time, commercial allocations will favour those who can demonstrate their ability to fish selectively.*

Section two of this paper provides six principles that will guide the development of selective fishing in the Pacific Region. Section three provides a framework to implement the policies

outlined in this paper, and section four summarizes the next steps required to meet these commitments.

2. SELECTIVE FISHING OBJECTIVE AND PRINCIPLES

Selective Fishing Objective

The objective is to ensure that selective fishing technology and practices are adopted where appropriate in all fisheries in the Pacific Region, and that there are continuing improvements in harvesting gear and related practices.

Selective fishing is a requisite element of conservation-based fisheries. In meeting conservation objectives, fishing opportunities and resource allocations will be shaped by the ability of all harvesters – First Nations, commercial and recreational anglers – to fish selectively.

Selective fishing is defined as the ability to avoid non-target fish, invertebrates, seabirds, and marine mammals or, if encountered, to release them alive and unharmed.

Avoidance of non-target species is the best possible option in selective fishing. Test harvests on stock abundance, timing, and migration routes can supply valuable data to help develop fishing strategies that avoid non-target species or stocks of concern. Licensed harvesters can also play a role by informing the Department if stocks of concern are encountered. This may require improved communications and a shift in the practices of licensed harvesters who may be accustomed to keeping such information confidential.

The next best option involves releasing non-target fish, invertebrates, seabirds, and marine mammals encountered (and captured) alive and unharmed, or in the best possible condition, to maximize survival. Fish released that would not likely survive long enough to reproduce should be counted as mortalities, along with all retained fish. Fisheries and Oceans Canada is interested in developing ways of estimating spawning success of released fish.

Fishing selectively may require modifications to existing gear and fishing methods, or the introduction of alternative fishing gear and technology. Selecting out non-target stocks is the key objective, but gear and methods that are not effective at capturing target stocks will not be useful.

The separation of species while selectively harvesting fish can be carried out and evaluated relatively effectively. However, selectively separating different stocks of a single species is currently difficult, more expensive, and in many cases impossible to evaluate. Advances have been made using DNA analysis for stock identification of some species of animals, but much work remains before these techniques can be applied on a large scale.

Other techniques such as mass marking of hatchery fish has proven to be a useful technique to distinguish harvestable enhanced salmon stocks from wild stocks destined for release. The technique cannot be used however, to separate abundant wild stocks from ones that are threatened.

Selective Fishing Principles

To achieve the objective of ensuring all Pacific fisheries are selective, Fisheries and Oceans Canada has established the following principles.

Principle 1 – Conservation of Pacific fisheries stocks is the primary objective and will take precedence in managing the resource.

A precautionary approach to fisheries management will continue to be adopted in all fisheries, and an ecosystem approach will guide Fisheries and Ocean's management in the future. The long-term productivity of the resource will not be compromised because of short-term factors or considerations – tradeoffs between current harvest benefits and long-term stock well-being will be resolved in favour of the long term.

To support this principle of conservation, government, First Nations and stakeholders will together be responsible and accountable for sustainable fisheries. As such, the Department recognizes and supports the principles outlined in the Canadian fishing industry-developed *Code of Conduct for Responsible Fishing Operations*, and will encourage other harvesting sectors to develop similar commitments.

Principle 2 – All Pacific recreational and commercial fisheries will adhere to selective fishing standards within set timelines.

Fisheries and Oceans Canada will, working with recreational fishing and commercial harvester organizations, develop selective fishing standards and implementation action plans for all Pacific recreational and commercial fisheries by January 2003.

Fisheries and Oceans Canada will also work with First Nations to continue to develop selective fishing practices in all fisheries, including food, social and ceremonial fisheries.

As a starting point, the Department will assess bycatches with harvesters and anglers to determine how best to establish selective fishing standards and meet conservation objectives. Standards will be established as appropriate for each fishery, and may vary according to the management regime used, or a combination thereof (e.g., area licensing, total allowable catch, individual vessel quotas, bycatch limits).

Selective fishing standards will be described in the plans for each fishery. The Department will set implementation standards for each fishery. They may be implemented through conditions of licence or, in some cases, through voluntary adoption by licence holders.

Examples of standards are:

- Certification of licence holders in responsible and selective fishing standards.
- Classification of fisheries according to risk - higher risk fisheries would require more stringent selective fishing standards and techniques.

- Fishery or vessel bycatch limits that may trigger closure of a fishery when the overall bycatch limit is reached, or the exit of a vessel from a fishery when a particular vessel surpasses its bycatch limit.

Scientists and fishery managers will meet with representative organizations and advisory bodies to initiate the process of setting selectivity standards and developing implementation action plans for each fishery. The development of standards will take into account available information on post-release fish mortality associated with various types of fishing gear. This has already begun for some fisheries.

Principle 3 – In fisheries where selective harvesting standards are not met within prescribed timelines, and bycatches prevent achievement of conservation objectives, fishing opportunities will be curtailed.

Fishing opportunities will be provided on the basis of selective fishing abilities, and resource allocations will shift to those who can meet selective fishing standards. Steps in resolving the inability to meet standards will be:

1. Modify existing gear and practices.
2. Re-allocate within a fishing sector.
3. Re-allocate between sectors.

The Allocation Board described in the October 1999 Fisheries and Oceans Canada policy paper, *An Allocation Policy For Pacific Salmon*, may be tasked with providing advice on such salmon allocations.

Principle 4 – Four fundamental strategies in fishing selectively to minimize mortalities and maximize chances for survival of non-target fish, invertebrates, seabirds and marine mammals will be adopted through increased knowledge of fishing gear and practices.

In order of preference they are:
1. avoidance of non-target species and stocks through time and area restrictions;
2. avoidance through gear design;
3. release alive and unharmed before being brought aboard or ashore, through gear design; and
4. release alive and unharmed from the deck of the vessel or landing site (e.g., shore or fishing pier).

Fisheries and Oceans Canada will work with all fishing sectors to combine scientific knowledge and research with local and traditional knowledge to determine where and when stocks of concern are present and to develop fishing plans to avoid encounters with these stocks.
For example, considerable effort has gone into reducing the number of seabirds caught in net fisheries in other jurisdictions by adopting such measures as precluding all sunrise and sunset fishing. Fisheries and Oceans Canada will review those actions in other jurisdictions and alternative gear types with fishers, and adopt or adapt for use those which are appropriate to reduce seabird bycatch.

Since 1998, the Canadian Fisheries Adjustment and Restructuring Program (CFAR), has funded experiments involving selective salmon harvesting gear and techniques, and methods of releasing salmon from stocks of concern. This work will continue as licence holders increasingly become convinced of the link between selective fishing and greater access to healthy stocks.

Responsibility for developing new and more selective fishing gear will reside principally with harvesters and anglers, including salmon fishers after the end of CFAR. Where feasible, an allocation of Total Allowable Catch (TAC) will continue to be used to encourage harvesters to continue experimenting with selective fishing gear and methods. In the salmon fishery, Fisheries and Oceans Canada will continue to provide up to five percent of the coast-wide TAC to support experimental pilots in selective fishing gear and methods development.

Technology, gear, and any resulting intellectual property arising from experimental work involving public funds will remain in the public domain.

Principle 5 – First Nations and the recreational and commercial fishing sectors will be responsible for continuous learning and skills development and transfer of responsible and selective harvesting practices.

The best selective fishing technology will be of no value unless it is correctly used and applied. Fisheries and Oceans Canada will cooperate with all sectors to develop and implement programs to increase awareness of selective fishing. Programs are needed that introduce the goals and methods of selective fishing, and that teach basic knowledge, such as species identification and the best handling and release practices.

Over time, as new technology is developed and practices are refined, fisheries will continue to become more selective. Fisheries and Oceans Canada will encourage Aboriginal, recreational and commercial organizations to develop and deliver programs that increase the awareness of selective fishing and skill levels of harvesters and anglers to employ selective practices.

Successful implementation of selective fishing strategies requires increasing awareness of the need for new approaches to harvesting. Fishers from all sectors must be aware of basic knowledge, such as species identification and the best handling and release practices.

3. SELECTIVE FISHING IMPLEMENTATION FRAMEWORK

Selective Fishing Standards

Selective fishing standards, as set by Fisheries and Oceans Canada, will be developed in consultation with harvesters and anglers by January 2003. The standards will have realistic and attainable objectives, and will include a toolbox of measures that harvesters and fisheries managers can apply and adapt effectively to each fishery. For example, allowable bycatch ceilings of non-target species, which may include seabirds and marine mammals, will be one measure that may be used in many fisheries.

The first step in this process will be for the Department to identify and qualify by degree of conservation concern bycatch issues for each fishery. With this information, fisheries managers will engage fish harvesters and anglers in a dialogue leading to selective fishing standards that will address the key conservation concerns caused by bycatch of non-target species.

Fish harvesters and anglers, working with fisheries managers, will be responsible for developing action plans for each fishery that best meet selective fishing standards. The action plans will include realistic timelines and management measures. Upon approval by Fisheries and Oceans Canada, the action plans will be adopted into fishing plans as mandatory measures.

For example, individual vessel quota fisheries will have standards that effectively address bycatch issues. This will incorporate a combination of the establishment of bycatch limits, mandatory retention of some bycatch species, and the counting of bycatch as part of the vessel quota which is most effective in meeting conservation objectives.

In some cases, it may be more appropriate to consider administrative solutions that will acknowledge the integrated or mixed species nature of some fisheries. This may minimize the economic and technical challenges posed by bycatch regulations, while achieving full accountability for conservation limits, otherwise known as TAC. Trawl and longline fisheries are good examples. By assuring that harvesters have the privilege to retain the species they are likely to encounter, through individual quotas or bycatch allowances, the Department can ensure that TAC's are not exceeded and fishers are not tempted to dump fish.

For example, in the past, harvesters fishing for rockfish were required to release halibut, and vice versa. Working with both licence groups, the Department initiated a pilot program whereby harvesters with both licences could fish their licences simultaneously and only continue fishing if they held quota for all species they encounter. These approaches shift the responsibility of fishing in a manner that matches species holdings to the licence holder. Fishing is limited by the smallest TAC or prohibited species. The trawl program provides a successful example of harvesters having an incentive to cooperate and to fish in a manner that matches the mixed stock nature of the fishery by trading species, identifying problem areas, as well as developing new and more selective fishing practices.

Another approach at setting standards for some fisheries may be development of a classification system that will rank each fishery according to risk, wherein access to the fisheries will be determined by another set of criteria that is respondent to the associated risk. For example, a 'class 1' fishery may constitute extreme risk, and a 'class 10' fishery low risk. Criteria to establish the risk of a fishery may include the amount and quality of stock status information, bycatch issues and potential habitat impacts. Criteria to determine access to a fishery may include the selectivity of gear (avoidance/release mortality), monitoring requirements, compliance risk/record, accreditation of harvesters, economic value of the fishery and the cost of management.

Fisheries and Oceans Canada will evaluate the performance of harvesters and anglers in meeting selective fishing standards on an annual basis, and adjustments, if necessary will be made though measures outlined in fishing plans. The standards are expected to evolve over time, so will be revisited from time to time.

Selective Fishing Gear and Practices

Fisheries and Oceans Canada will encourage and respond to proposals from proponents of projects that meaningfully increase the knowledge and applicable technology of selective fishing. These studies will be administered through cooperative agreements and conducted in a scientifically rigorous manner that allows duplication of the results and firm conclusions. Experimental work on selective fishing technology must be conducted according to international standards. The *Methodology Manual: Measurement of Fishing Gear Selectivity (1995)* and guidelines produced in 1998 by the Department for conducting experiments on the selectivity of gear and methods used to harvest Pacific salmon meet these standards.

Research, led by fish harvesters and anglers, will continue into the best methods to release catches of non-target fish species, seabirds, and marine mammals. Methods that maximize chances of post-release survival depend on the condition of the bycatch. When captured fish are healthy and/or uninjured through careful and skilled handling processes, for example, they can often be released directly from fishing gear without bringing them on board. If a captured fish is sluggish, tired or depleted, bringing it on board and reviving it in a tank, or otherwise helping it to recuperate, may increase chances of survival.

Fisheries and Oceans Canada will promote the use of devices that alert seabirds and mammals of the presence of nets, such as highly visible weedlines or acoustic pingers, where they have been proven effective and harmless to other species. In longline fisheries, the use of scare devices, such as Tori Lines or "bird-bags", that keep the birds away from the lines as they are being set, will be reviewed for implementation in regulating fisheries.

Training and Education

Initiatives to increase skills and awareness of responsible and selective fishing are already underway in varying degrees in the harvesting sectors. The following outlines approaches that can be built upon by First Nations, commercial harvesters and recreational anglers.

The scale and tradition of aboriginal fisheries lend themselves to selective fishing. Historically, First Nations primarily used fishing methods such as weirs, traps, dip nets and fences that could allow for selective harvest of fish. Today, many First Nations continue to fish selectively using dip nets, fish wheels, traps and beach seines. A need was identified by First Nations at a November 1999 selective fishing technical workshop to re-direct resources for communicating awareness among First Nations from printed material to community information programs. Fisheries and Oceans Canada will continue to explore this approach with First Nations in 2000.

The number and diversity of recreational fishing licence holders presents the major challenge to awareness and training in the recreational sector. Angling organizations, marinas, guides, outfitters and tour companies can all help train recreational fishers in the basics of species identification and best release techniques.

There is interest in the recreational sector to develop a training program similar to the Conservation and Outdoor Recreation Education (CORE) program for BC hunters, and for licensing or accreditation of tidal-water fishing guides. BC hunters are currently required to complete the CORE program, which is now administered by the BC Wildlife Federation, and pass an exam at the end of the course. Once the CORE exam has been passed, the individual applies for a "hunter number" which is required to purchase a hunting licence. Fisheries and Oceans Canada will work with the Sport Fish Advisory Board, the province of British Columbia and other recreational fishing sector organizations to investigate the desirability and feasibility of offering a CORE-like program for anglers in BC, and the possibility of certifying or licensing fishing guides in BC.

Commercial fishers have been aware of selective fishing initiatives for several years, but a more in-depth understanding of selective fishing methods and techniques is required.
In the commercial fishery, training often occurs "on-the-job" with fishers learning species identification and appropriate handling and release practices from their skippers and more experienced deck hands. Ensuring skippers have the necessary skills and knowledge to teach their crews may require formal training or education, possibly accompanied by professional educators, and leading to certification.

For the commercial sector, the notion of formal training is not new. Courses in responsible and selective fishing are already offered at Memorial University in Newfoundland through its Marine Training Centre and the Caraquet School of Fisheries in New Brunswick. The Canadian Council of Professional Fish Harvesters is working to promote mandatory accreditation of commercial licence holders on a national level. This has already been passed into law by the provinces of Newfoundland and Quebec.

Certification training such as that being developed for fisheries observers through Malaspina College and the Department, could serve as a template for formal training of both commercial and recreational fishers. Training modules on seabird and marine mammal biology, identification and avoidance techniques need to be incorporated in such programs.

Future Costs

Principle 11 of *A New Direction for Canada's Pacific Salmon Fisheries* states in part:

> *"Government and stakeholders will together be responsible and accountable for sustainable fisheries. Under the new direction for the salmon fisheries, resource managers and stakeholders will share joint responsibility for sustainable fisheries including management costs, decisions, and accountability."*

Responsibility and costs for developing and purchasing new and more selective fishing gear required in meeting selective fisheries standards will reside principally with anglers and harvesters in the recreational and commercial sectors. This will also apply to salmon harvesters and anglers after the Canada Fisheries Adjustment and Restructuring Program ends in 2002. Where feasible, the use of TAC will be applied to fund experimental pilots to test new gear and fishing methods in the commercial fisheries.

In the recreational fisheries, Fisheries and Oceans Canada is considering the future use of selective mark fisheries for hatchery coho. The merits of such fisheries will depend upon a high survival rate for unmarked fish that are caught and released. Increased sampling costs resulting from mass-marking programs are expected to be about $1.1 million annually, with up to $1.0 million in future capital costs for electronic detection equipment. The Department will work with the recreational sector and other potential beneficiaries of selective mark fisheries to explore future funding mechanisms for this approach.

4. NEXT STEPS & TARGET DATES

This document is being publicly released and circulated among First Nations and Pacific fishery stakeholders to confirm the Department's new direction with respect to selective fishing. Fisheries and Oceans Canada's selective fishing policy will be reviewed from time to time so it stays current and applicable.

- Selective fisheries standards, timelines and action plans will be established for all fisheries by January 2003.

- The Department will consult with recreational angler and commercial harvester organizations on further selective fishing initiatives and related harvest allocations in support of selective fishing leading up to the development of standards, timelines and action plans.

- The allocation board will be responsible for considering adjustments to commercial harvest allocations based on demonstrated abilities to fish selectively.

- Management plans will include selective fishing measures, and by 2003 will include selective fishing standards, timelines and action plans.

ANNEX 1

GLOSSARY

bycatch – fish that are harvested in a fishery, but usually not sold or kept for personal use, as well as seabirds and marine mammals that become entangled or caught by fishing gear. Bycatch includes the discard of whole fish at sea or elsewhere, including those fish discarded for economic and regulatory or regulatory reasons, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include fish legally retained in a fishery and kept for personal or cultural use, or that enter commerce through sale, barter or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program.

encounters – numbers of a species or stock that are caught by fishing gear, including fish released either voluntarily or by regulation.

escapement - the number of mature salmon that pass through (or escape) the fisheries and return to their rivers of origin to spawn.

harvest - fish caught and retained by a fishery (consumptive harvest).

mortality - the number of fish killed through harvest or through the act of releasing species that cannot be retained in a fishery.

population – generally, a population consists of fish of a single species that spawn in the same stream or reach within a stream. They exhibit similar life history traits and are adapted to the habitats they occupy.

selective fishery - a conservation-based management approach which allows for the harvest of surplus target species or stocks while aiming to minimize or avoid the harvest of species or stocks of conservation concern, or to release bycatch unharmed.

stock – an aggregate of populations of a single species that are grouped for management purposes. They generally have similar migration patterns and run timing.

terminal fishery - fishery in a river or near the mouth of a river where returning salmon pass through or congregate near to and prior to spawning, and where stocks are relatively unmixed.

ANNEX 2
A NEW DIRECTION FOR CANADA'S PACIFIC SALMON FISHERIES

OCTOBER 1998

Principle 1
Conservation of Pacific salmon stocks is the primary objective and will take precedence in managing the resource.

Principle 2
A precautionary approach to fisheries management will continue to be adopted.

Principle 3
Continue to work toward a net gain in productive capacity for salmon habitat in British Columbia.

Principle 4
An ecological approach will guide fisheries and oceans management in the future.

Principle 5
The long term productivity of the resource will not be compromised because of short-term factors or considerations – tradeoffs between current harvest benefits and long-term stock well-being will be resolved in favour of the long term.

Principle 6
All sectors – First Nations, recreational and commercial – will use selective methods to harvest salmon.

Principle 7
First Nations' requirements for food, social and ceremonial purposes will continue to have first priority after conservation requirements.

Principle 8
Whenever possible, the recreational fishery will be provided with more reliable and stable fishing opportunities.

Principle 9
The commercial fishery will be a more diversified (less dependent on salmon) and economically viable sector, better able to withstand fluctuations in the cycles of the resource and the market.

Principle 10
Clear, objective and relevant information on major issues requiring decisions will be provided to the public with sufficient time and opportunity for review, comment and feedback. Periodic

review of progress and achievements will be initiated to facilitate accountability for the sound management of the salmon resource and its habitat.

Principle 11
Government and stakeholders will together be responsible and accountable for sustainable fisheries.

Principle 12
Enhanced community, regional and sector wide input to decision making will be pursued through a structured management and advisory board system.

ANNEX 3
CODE OF CONDUCT FOR RESPONSIBLE FISHING OPERATIONS

INTRODUCTION

The Canadian fishing industry is committed to the achievement of sustainability in marine and freshwater fisheries. The industry has therefore developed the Code of Conduct for Responsible Fishing Operations as an essential step in pursuit of this objective.

The Code outlines general principles and guidelines for all commercial fishing operations in Canadian waters. Implementation of the Code will contribute directly to the conservation of stocks and the protection of the aquatic environment for present and future generations of Canadians.

Bearing in mind that Canada played a leading role in the development of the UN Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries, this Canadian Code of Conduct is consistent with, and in no way diminishes, the FAO Code.

The Canadian Code of Conduct is based on the following fundamental points of agreement:

a. That the Code is applicable to all participants in commercial fishing operations in Canadian waters.
b. That there are four distinct fishing regions in Canada: Atlantic, Pacific, Arctic and inland fisheries, and each region will require specific mechanisms and regulations to address the unique problems and needs of their fisheries.
c. That nothing in this Code will serve to justify or impose any allocation or sharing of freshwater or marine resources.
d. That Conservation Harvesting Plans or Fisheries Management Plans should incorporate the Code of Conduct.

In developing this Code, Canadian commercial fish harvesters expect that other users of marine and freshwater resources will develop their own codes of conduct within the FAO framework to contribute to the sustainability of those resources. It is also expected that Canadian fisheries regulatory agencies will take appropriate steps to bring their fisheries management policies and practices into line with this Code and will make themselves accountable to the resource users in this regard.

The Code of Conduct for Responsible Fishing Operations articulated by Canadian fish harvesters has at its core a philosophy of responsible fishing. Based on this philosophy, fish harvesters who have ratified this Code will pursue the following principles:

Principle 1
Fish harvesters will take appropriate measures to ensure fisheries are harvested and managed responsibly to safeguard sustainable use of Canada's freshwater and marine resources and their habitats for present and future generations of Canadians.

For the purposes of this Code, sustainability is understood to mean the harvesting of a stock in such a way, and at a rate, that does not threaten the health of the stock, or inhibit its recovery if it has previously declined, thereby maintaining its potential to meet the needs and aspirations of present and future generations of fish harvesters.

Principle 2
Taking into account the economic importance of the fisheries to industry participants and their communities, fish harvesters will take appropriate measures to pursue the ecological sustainability of Canadian fisheries.

Principle 3
Fish harvesters will acknowledge that conservation and sustainable use of freshwater and marine resources is a shared responsibility, and requires a spirit of cooperation, among all industry participants and the appropriate regulatory authorities.

Principle 4
Fish harvesters will address problems of fisheries in Canada, adopting specific mechanisms and regulations as required.

Principle 5
Fish harvesters will work to balance the level of fishing effort with the sustainable supply of fisheries' resources to ensure responsible management and responsible professional harvesting.

Principle 6
To the extent practical, fish harvesters will minimize unintended bycatch and reduce waste and adverse impacts on the freshwater and marine ecosystems and habitats to ensure healthy stocks.

Principle 7
Fish harvesters will develop, maintain and promote public awareness and understanding of the issues surrounding responsible fishing and the measures taken by fishers to conserve stocks and protect the environment.

Principle 8
Fish harvesters will promote the recognition of their specialized knowledge gained through experience, and the integration of this knowledge within scientific analyses and fisheries management policies and regulations.

Principle 9
Fish harvesters will conduct harvesting operations in accordance with Canadian fisheries' laws

and regulations, international laws, regulations, conventions, declarations, and protocols adopted by Canada, and harvesting plans adopted by each fishery.